

# California

FUEL CELL  
PARTNERSHIP



*DRIVING FOR THE FUTURE*



# Mission of the CaFCP

**To demonstrate in California the potential for fuel cell-powered vehicles as a safe, practical, clean and efficient alternative to vehicles powered by internal combustion engines by:**

- **Demonstrating vehicle technology**
- **Demonstrating alternative fuel infrastructure**
- **Exploring the path to commercialization**
- **Increasing public awareness**

*--From CaFCP Statement of Intent*



# Automotive Partners

DAIMLERCHRYSLER



HYUNDAI

**NISSAN**

**HONDA**



 **TOYOTA**



*Ford Motor Company*



# Energy Partners



**ChevronTexaco**

**ExxonMobil**



# Technology Partners

**BALLARD<sup>®</sup>**



**UTC Fuel Cells**

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A United Technologies Company



# Government Partners





# **Environmental and Energy Statement of Intent**

**The California Fuel Cell Partnership is committed to promoting fuel cell vehicle commercialization as a means of moving toward a sustainable energy future, increasing energy efficiency and reducing or eliminating air pollutants and greenhouse gas emissions**

***Adopted by the CaFCP Steering Team,  
July 2000***



# 2001 and 2002 activities

## 2001 Highlights: Taking it to the streets!

- ✓ HQ facility up and running with tenants
- ✓ Vehicles driving in real-world conditions
- ✓ 25 public outreach events reaching 175,000 people
- ✓ Hydrogen fueling experience
- ✓ Fuel Scenarios Study released

## 2002 Goals: Deliver now to shape the future!

- Operate 20 CaFCP vehicles, accumulating 60,000 miles
- Educate two regional emergency response agencies
- Install Methanol Station at West Sacramento HQ
- Install Hydrogen Station in Richmond, as well as two additional Hydrogen Stations
- Establish H2 Vehicle Facilities Study
- Announce CaFCP plans beyond 2003
- Reach 250,000 people via Outreach Events
- Provide 1,000 Teacher Learning Kits to Middle and High School Science Teachers





# Headquarters Facility



- Grand Opening  
November 1, 2000  
– West Sacramento, CA
- Operations and fueling base for FC passenger vehicles
- Partnership office and public gallery
- Monthly tours and special events



# The Vehicles *Progress Together*



**16 cars**



**76,500 miles**

**4600 riders/drivers**



# Fuel Infrastructure

## *Gaining Experience*



- Provided by Energy Partners
- Liquid H<sub>2</sub> stored in 4500 gallon tank
- Delivers gaseous hydrogen at two pressures:
  - ✓ 3600 psi & 5000 psi
- Fill time  $\leq 4$  min.

**1500 fueling events**

**PRAXAIR**

**AIR  
PRODUCTS**

**MeOH station opened  
4/25/02**

**METHANEX**







# Additional Fuel Stations

- Satellite H<sub>2</sub> fueling  
October 2002
  - Richmond, CA
- SunLine Transit  
facility on-site
- Others TBD





# Bus Demo Transit Agencies



Alameda Contra Costa  
Transit East Bay Area



Santa Clara Valley  
Transportation  
Authority



SunLine Transit Agency  
Coachella Valley





# Fuel Cell Buses

**Demonstration will include 7  
“first generation” fuel cell buses  
operated at 3 transit agencies**

3 - AC Transit  
(VanHool/ISE/UTC)

3 - Santa Clara VTA  
(Gillig/Ballard)

1 - SunLine (VanHool/ISE/UTC)

Delivery of buses expected in 2004

Two year in-service demonstration

Data collection/evaluation report at  
end of in-service demonstration





# Fuel Scenarios Study



Completed: October 2001

Purpose: Examine the path to commercialization for each of four fuel scenarios:

✓ Hydrogen

✓ Methanol

✓ Gasoline

✓ Ethanol

- What are the success scenarios for FCVs?
- What are the technical and economic challenges for each fuel?
- What can industry and government do to assist?

Available to view or download on website: [www.cafcp.org](http://www.cafcp.org)





# Key Study Conclusions

**Methanol**

**Hydrogen**

**Gasoline**

**Ethanol**



- ✓ Revolutionary changes
- ✓ Important societal and personal benefits
- ✓ All infrastructure issues appear solvable
- ✓ Ethanol limited; other fuels all possible
- ✓ All fuels need improved fuel processing
- ✓ Early marketing challenging but possible
- ✓ Demo phase will prepare FCVs and public
- ✓ Important support role for government

***Activities are in progress in all key areas***





# Public Outreach

# Over 100 HQ tours



## 12 High School Classes



## Over 2,200 HQ visitors





# Events



Anaheim, 2001

- Marathons, County Fairs, Conferences, Community Days, Ride 'n Drives
- Michelin Bibendum Road Rally 2001
- CaFCP Technology Forum

## *2002 Highlights:*

- Future Car Congress, Virginia (June 2-5)
- San Diego County Fair (June 28-30)
- CaFCP Central Coast Road Rally (Sep 4-7)
- Fuel Cell Seminar, Palm Springs (Nov 18-21)
- Monthly Community Events



California Coast 2002 Road Rally



# Plans for CaFCP 2004-2007

- Current charter runs through 2003
- CaFCP will continue as an organization, with a focus on:
  - Placing vehicles and fuel in the hands of real-world users
  - Demonstration of fuel alternatives
  - Expanded education and outreach
- An announcement of further details is expected by the end of 2002



Visit us at [www.fuelcellpartnership.org](http://www.fuelcellpartnership.org)